

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
October 9, 2014

SUBJECT: Request for Extension of NESHAPs Compliance Date
Mt. Carmel Cogen
Mt. Carmel Township, Northumberland County
Title V Operating Permit (TVOP) 49-00001

TO: Muhammad Q. Zaman *MRZ*
Environmental Program Manager
Air Quality Program

THROUGH: David M. Shimmel, P.E. *DS*
Chief, New Source Review
Air Quality Program

FROM: John J. Twardowski, P.E. *JJT*
Air Quality Engineer
Facilities Permitting Section
Air Quality Program

On September 24, 2014, Mt. Carmel Cogen submitted a request for extension of compliance for the Coal and Oil-Fired Electric Utility Steam Generating Units, 40 CFR Part 63 Subpart UUUUU, also known as the MATS rule. The request applies to the facility's 623.5 MMBtu/hr anthracite culm-fired circulating fluidized bed boiler (Source ID 031). As per the Subpart the unit would be considered an "existing coal-fired EGU designed for low rank virgin coal".

Pursuant to §63.6(i)(4)(i)(A) an extension is allowed for the compliance date for up to one year "for the installation of controls". As required in §63.6(i)(4)(i)(B), the request was submitted at least 120 days prior to the compliance date which, for this facility, is April 16, 2015, as specified in §63.9984(b). The specific requirements to be included in the request and the company's responses to these requirements are as follows:

§63.6(i)(6)(i)(A): A description of the controls to be installed to comply with the standard.

As the boiler exists at present, it cannot meet the SO₂ limit (0.20 lbs/MMBtu) specified in Table 2, Item #2 of Subpart UUUUU. The company believes that if they could increase the contact time of the limestone sorbent and ash within the boiler, the SO₂ emissions could be reduced down to the NESHAPs limit. Presently, the boiler is capable of achieving an SO₂ emission rate of 0.24 lbs/MMBtu; therefore, the proposed change in operation would only have to reduce the SO₂ emissions by 0.04 lbs/MMBtu, or approximately 25 lbs/hr. The company is proposing to replace the boiler's two existing cyclone vortex finders which are components inherent to the boiler itself and provide control of the circulation of the gases to maintain the fluidity of the fuel within the combustion chamber. They intend to replace one finder first, test, and, if sufficient reduction is

achieved, replace the second finder. Additionally, since no increase in emissions is anticipated nor would the cost of these replacements exceed 50% of the fixed capital cost of replacing the boiler outright, no plan approval would be required for these replacements.

§63.6(i)(6)(i)(B)(1): The date by which on-site construction, installation of emission control equipment, or a process change is planned to be initiated.

According to the request, the company anticipates initiating the replacement of the first finder sometime before the end of this year (4th quarter 2014).

§63.6(i)(6)(i)(B)(3): The date by which on-site construction, installation of emission control equipment, or a process change is planned to be completed.

The request did not identify this deadline; however, during an October 6, 2014, phone call I had with Mr. Paul Freeman, Executive VP of Mt. Carmel Cogen, he anticipates completing the replacement of the second finder sometime within the 4th quarter of 2015.

§63.6(i)(6)(i)(B)(4): The date by which final compliance is to be achieved.

As per the request, the company anticipates final compliance by the requested one year extension date of April 16, 2016.

According to §63.6(i)(4)(i)(A), the owner or operator of an affected source who has requested an extension of compliance shall apply to have the source's Title V permit revised to incorporate the conditions of the extension of compliance. This can be done via a minor permit modification in accordance with 25 Pa. Code §127.462. This modification will need to be finalized prior to the published compliance date of April 16, 2015.

Conclusions/Recommendations

Based on my review of the information submitted, I concur with the company's plan of action. Increasing the contact time of the sorbent should provide additional SO₂ removal and since the required reduction is relatively small this physical change to the boiler should achieve the reduction they need. The company indicated that the only other alternative would be to increase the amount of limestone sorbent fed to the boiler. This would, however, require a significant capital investment (larger storage area, larger feeding system and possibly a bigger baghouse). The company would rather try the boiler modifications as proposed. Again, I concur with their plan. I will caution, however, that should their plan not achieve the reductions they need they will have to come up with an alternative plan fairly quickly. The company factored this in which is why they are staging the replacements of the two finders.

As required in §63.6(i)(10), the extension approval letter must include the following elements:

(i) Identify each affected source covered by the extension.

The only source is the CFB boiler (Source ID 031) as noted above.

(ii) Specify the termination date of the extension.

The termination date would be April 16, 2016, i.e., one year from the published compliance date.

(iii) Specify the dates by which steps toward compliance are to be taken, if appropriate.

In order to keep the company on track I recommend the following milestone dates:

- (1) By April 16, 2015, Mt. Carmel Cogen shall have the first updated cyclone vortex finder installed and operational.
- (2) By July 16, 2015, Mt. Carmel Cogen shall submit to the Department in writing, the results of any performance tests on the first updated cyclone vortex finder. Additionally, this submission shall either: (a) indicate Mt. Carmel Cogen's intent to continue with the proposed project (i.e., install the second updated cyclone vortex finder) or (b) provide an alternative method of compliance with Subpart UUUUU by the extended compliance date of April 16, 2016.
- (3) By December 31, 2015, Mt. Carmel Cogen shall have the second updated cyclone vortex finder installed and operational.
- (4) By April 16, 2016, Mt. Carmel Cogen shall submit to the Department in writing verification that the facility's 623.5 MMBtu/hr anthracite culm-fired circulating fluidized bed boiler (Source ID 031) is in compliance with all applicable requirements specified in Subpart UUUUU.

(iv) Specify other applicable requirements to which the compliance extension applies.

The extension would also apply to the initial performance testing specified in §63.10000(c)(1). With changes being proposed to the boiler it would not be feasible to test the boiler prior to these changes. Additionally, any notification, reporting or recordkeeping specified in §63.10030 applicable to compliance demonstration should not be required until the proposed changes have been made.

(v)(A) Under paragraph (i)(4), specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the health of persons during the extension period.

I cannot recommend any additional conditions beyond those already addressed herein.

cc: Central Office, Air Quality Permits
EPA, Region 3

